UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,493,280 B2
APPLICATION NO. : 09/902928
DATED : February 17, 2009
INVENTOR(S) : Kemal Guler et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page

Below item (57) Abstract, replace "24 claims, 20 Drawing Sheets" with --24 claims, 11 Drawing Sheets--.

In the Drawings

In the drawings, delete drawing sheets 11-16 of 20 consisting of figs. 11A to 11F and replace therefor drawing sheet 11 having replacement fig. 11 as shown on the attached page 2 of 2, replacement drawing sheet 11 of 11.

The set of drawings have been replaced to reflect figs. 1-11 as shown on attached new set of drawings having 11 drawing sheets.

In col. 22, line 4, in claim 4, after "receiving" delete "said".

Signed and Sealed this
Twenty-eighth Day of August, 2012

David J. Kappos

David J. Kappos
Director of the United States Patent and Trademark Office

(12) **United States Patent**
Guler et al.

(10) **Patent No.: US 7,493,280 B2**
(45) **Date of Patent: *Feb. 17, 2009**

(54) **METHOD AND SYSTEM FOR SETTING AN OPTIMAL RESERVE PRICE FOR AN AUCTION**

(75) Inventors: **Kemal Guler**, Cupertino, CA (US); **Tongwei Liu**, Redwood City, CA (US); **Hsiu-Khuern Tang**, Menlo Park, CA (US); **Kay-Yut Chen**, Sunnyvale, CA (US); **Fereydoon Safai**, Los Altos Hills, CA (US); **Ren Wu**, San Jose, CA (US)

(73) Assignee: **Hewlett-Packard Development Company, L.P.**, Houston, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1642 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/902,928**

(22) Filed: **Jul. 10, 2001**

(65) **Prior Publication Data**

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(51) **Int. Cl.**
G06Q 40/00 (2006.01)

(52) **U.S. Cl.** **705/37**; 705/35

(58) **Field of Classification Search** ..... 705/37, 705/36 R, 27, 80, 26
See application file for complete search history.

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Bulow et al (The Journal of political economy, vol. 97, No. 5. (Oct. 1989), pp. 1060-1090).*

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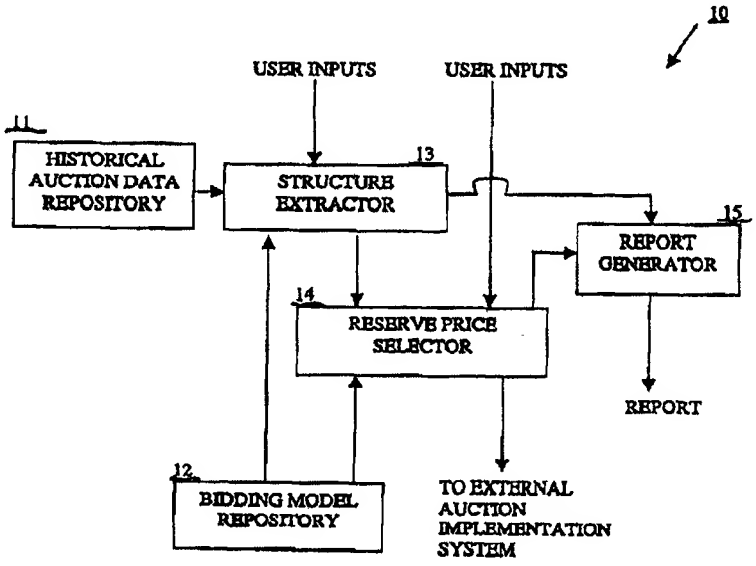
Primary Examiner—Thomas A. Dixon
Assistant Examiner—Ojo O. Oyebisi

(57) **ABSTRACT**

One embodiment of the present invention provides a method and system that computes the optimal level of the reserve price for an auction, with respect to a multiplicity of possible evaluation criteria that the end user of the system may specify. In one embodiment, structural elements characterizing the auction situation are estimated from bid data available on past auctions. The estimated structural elements are then used in the formulation of the user's expected payoff as a function of the reserve price. This objective function is then optimized to obtain the best level of the reserve price. In one embodiment, this method is implemented by a process executed on a computer system, under the control of software and firmware directing the operation of its processors and components. In one embodiment, a computer readable medium causes a computer system to execute the steps in a process for implementing the method.

24 Claims, 11 Drawing Sheets



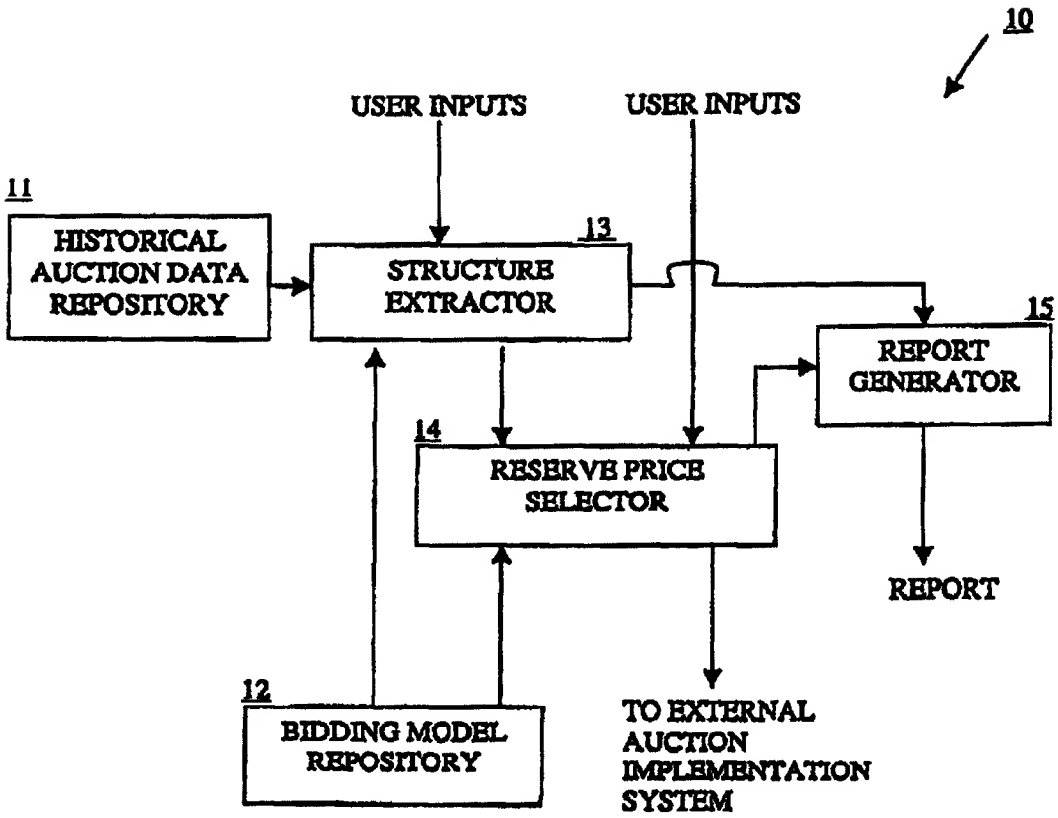

10
USER INPUTS
USER INPUTS
11
HISTORICAL AUCTION DATA REPOSITORY
13
STRUCTURE EXTRACTOR
15
REPORT GENERATOR
14
RESERVE PRICE SELECTOR
REPORT
12
BIDDING MODEL REPOSITORY
TO EXTERNAL AUCTION IMPLEMENTATION SYSTEM

FIGURE 1

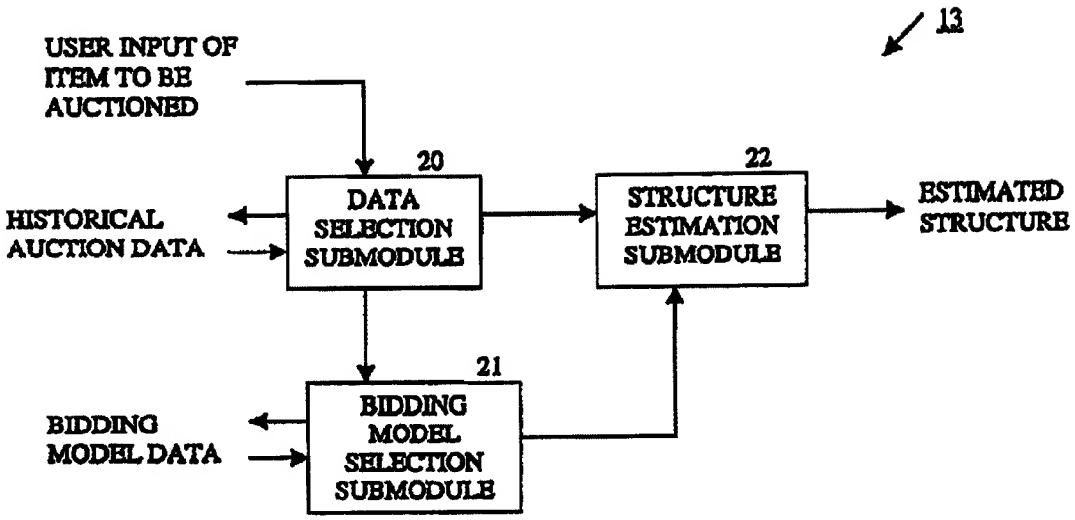

13
USER INPUT OF ITEM TO BE AUCTIONED
20
DATA SELECTION SUBMODULE
22
STRUCTURE ESTIMATION SUBMODULE
ESTIMATED STRUCTURE
HISTORICAL AUCTION DATA
21
BIDDING MODEL SELECTION SUBMODULE
BIDDING MODEL DATA

FIGURE 2

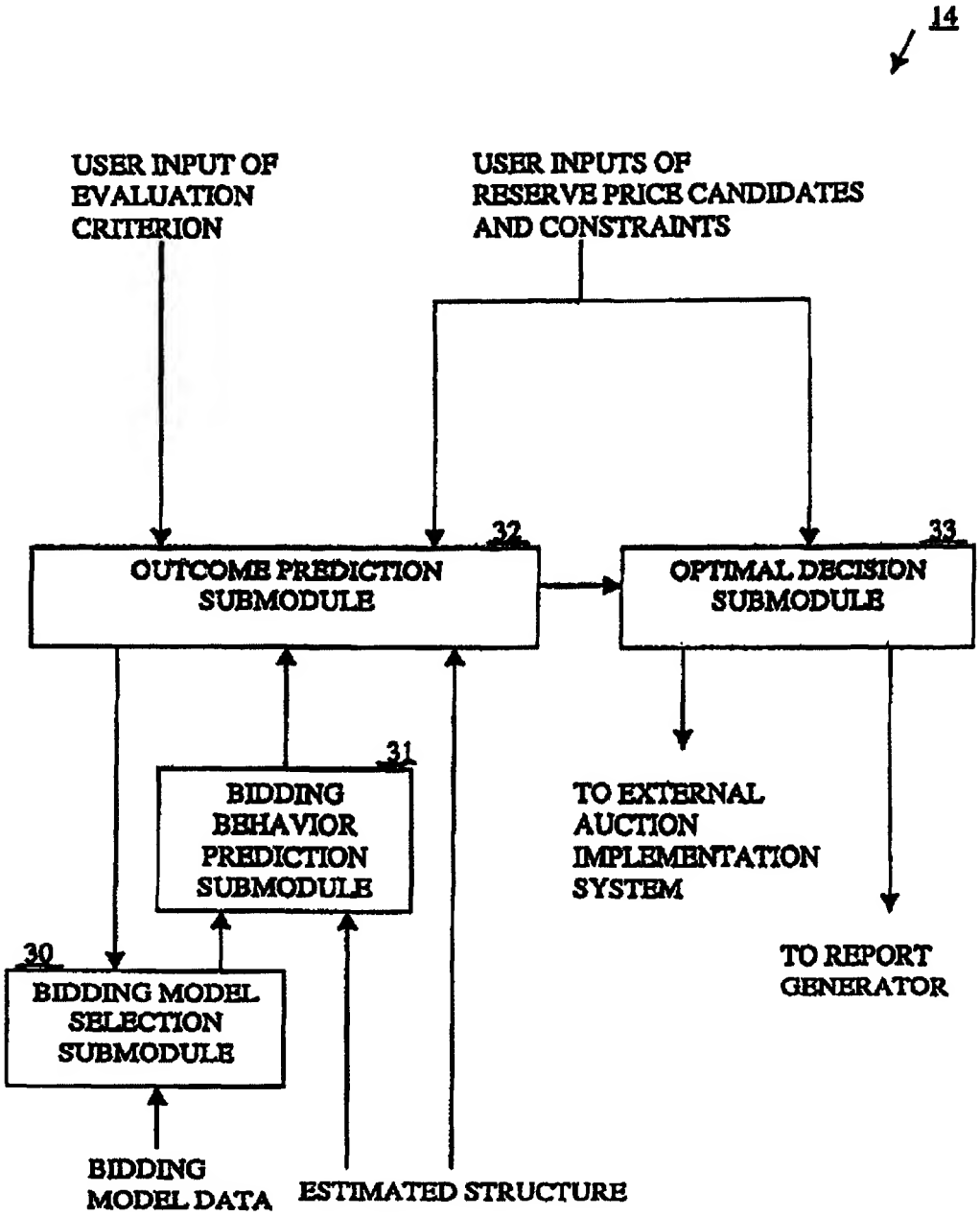

14
USER INPUT OF EVALUATION CRITERION
USER INPUTS OF RESERVE PRICE CANDIDATES AND CONSTRAINTS
32
OUTCOME PREDICTION SUBMODULE
33
OPTIMAL DECISION SUBMODULE
31
BIDDING BEHAVIOR PREDICTION SUBMODULE
30
BIDDING MODEL SELECTION SUBMODULE
TO EXTERNAL AUCTION IMPLEMENTATION SYSTEM
TO REPORT GENERATOR
BIDDING MODEL DATA
ESTIMATED STRUCTURE

FIGURE 3

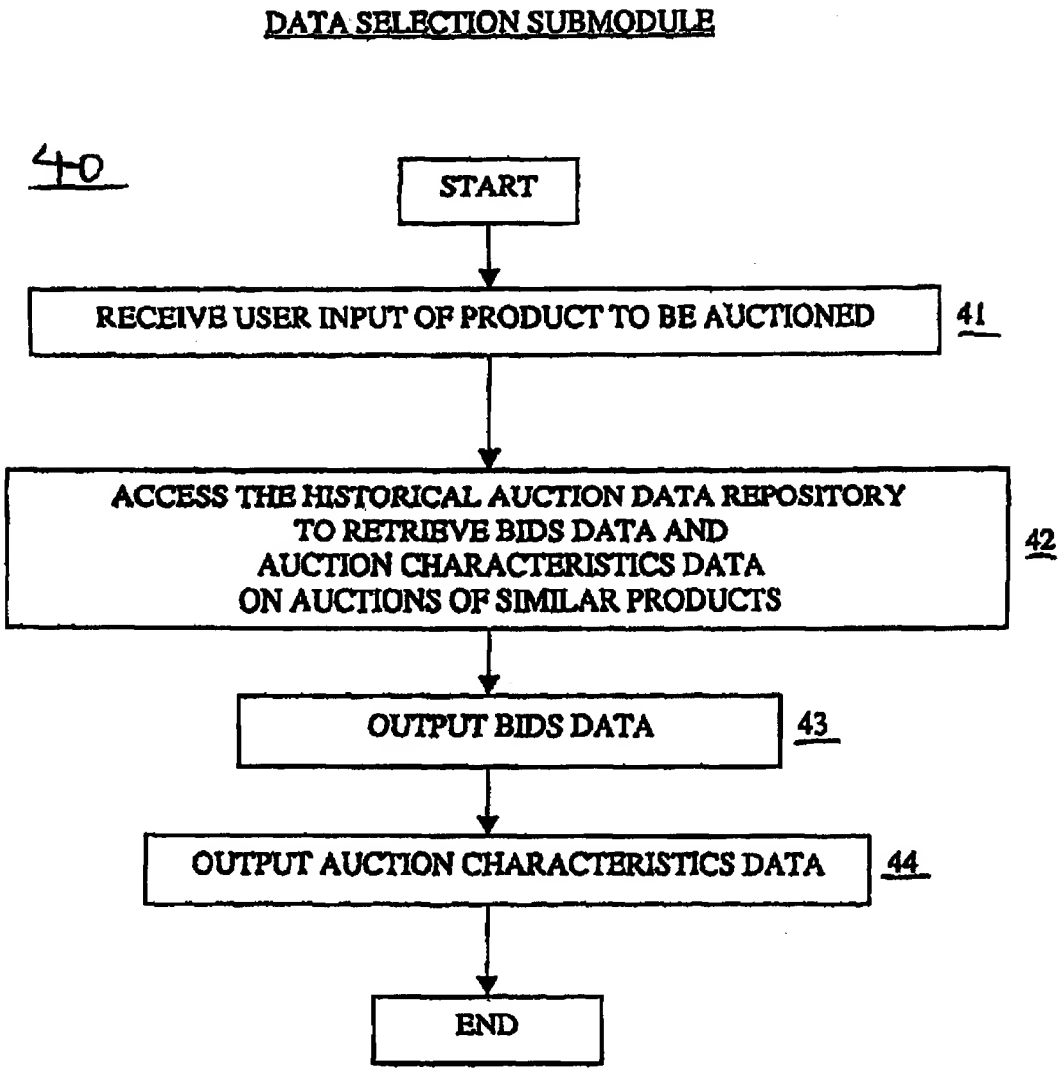

DATA SELECTION SUBMODULE
40
START
RECEIVE USER INPUT OF PRODUCT TO BE AUCTIONED
41
ACCESS THE HISTORICAL AUCTION DATA REPOSITORY TO RETRIEVE BIDS DATA AND AUCTION CHARACTERISTICS DATA ON AUCTIONS OF SIMILAR PRODUCTS
42
OUTPUT BIDS DATA
43
OUTPUT AUCTION CHARACTERISTICS DATA
44
END

FIGURE 4

BIDDING MODEL SELECTION SUBMODULE

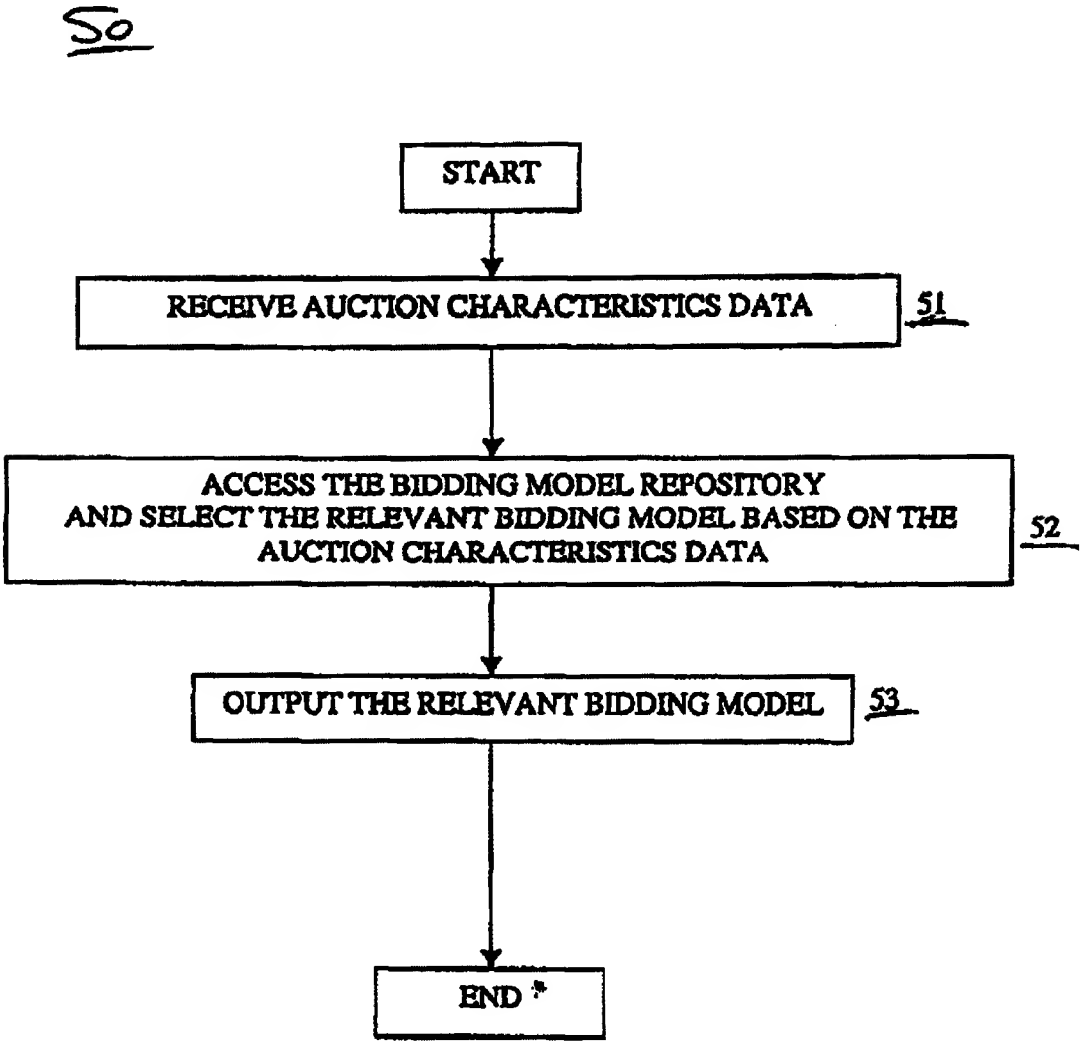


FIGURE 5

STRUCTURE ESTIMATION SUBMODULE

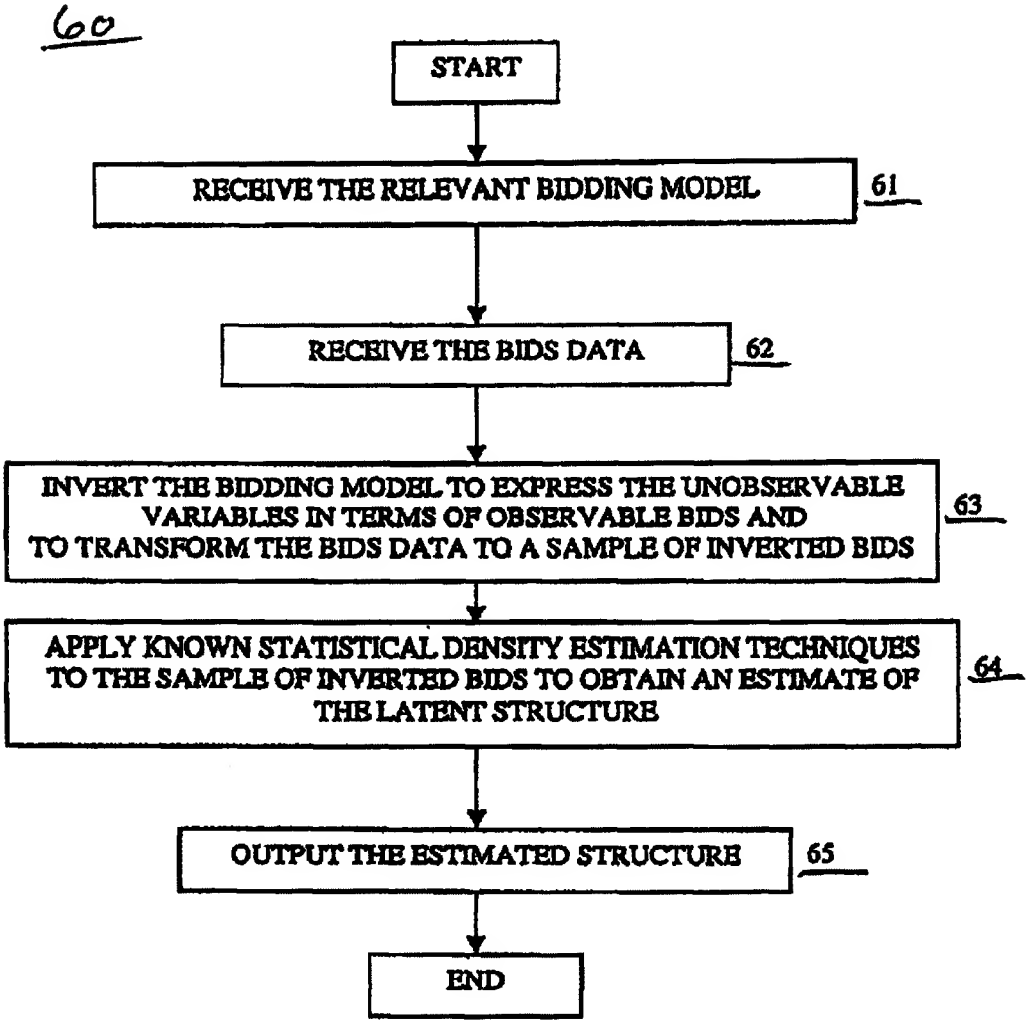


FIGURE 6

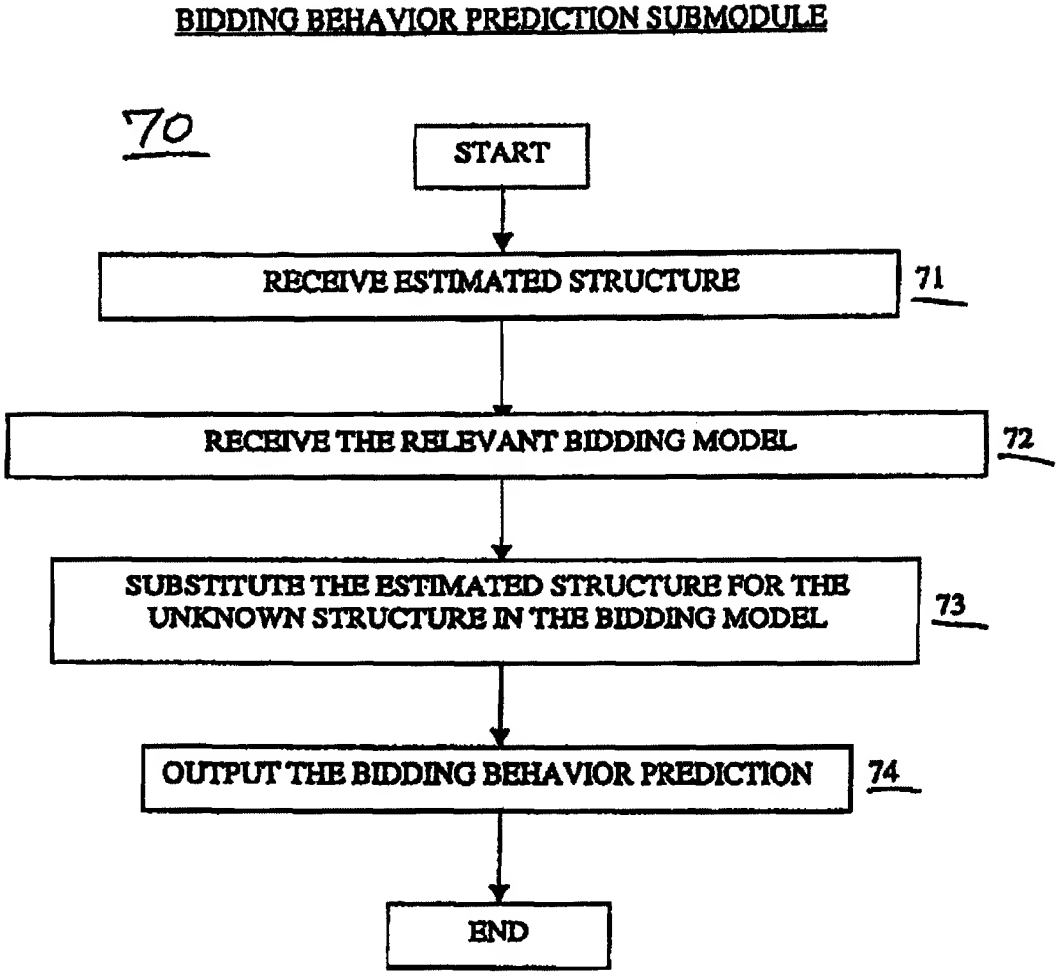

BIDDING BEHAVIOR PREDICTION SUBMODULE
70
START
RECEIVE ESTIMATED STRUCTURE
71
RECEIVE THE RELEVANT BIDDING MODEL
72
SUBSTITUTE THE ESTIMATED STRUCTURE FOR THE UNKNOWN STRUCTURE IN THE BIDDING MODEL
73
OUTPUT THE BIDDING BEHAVIOR PREDICTION
74
END

FIGURE 7

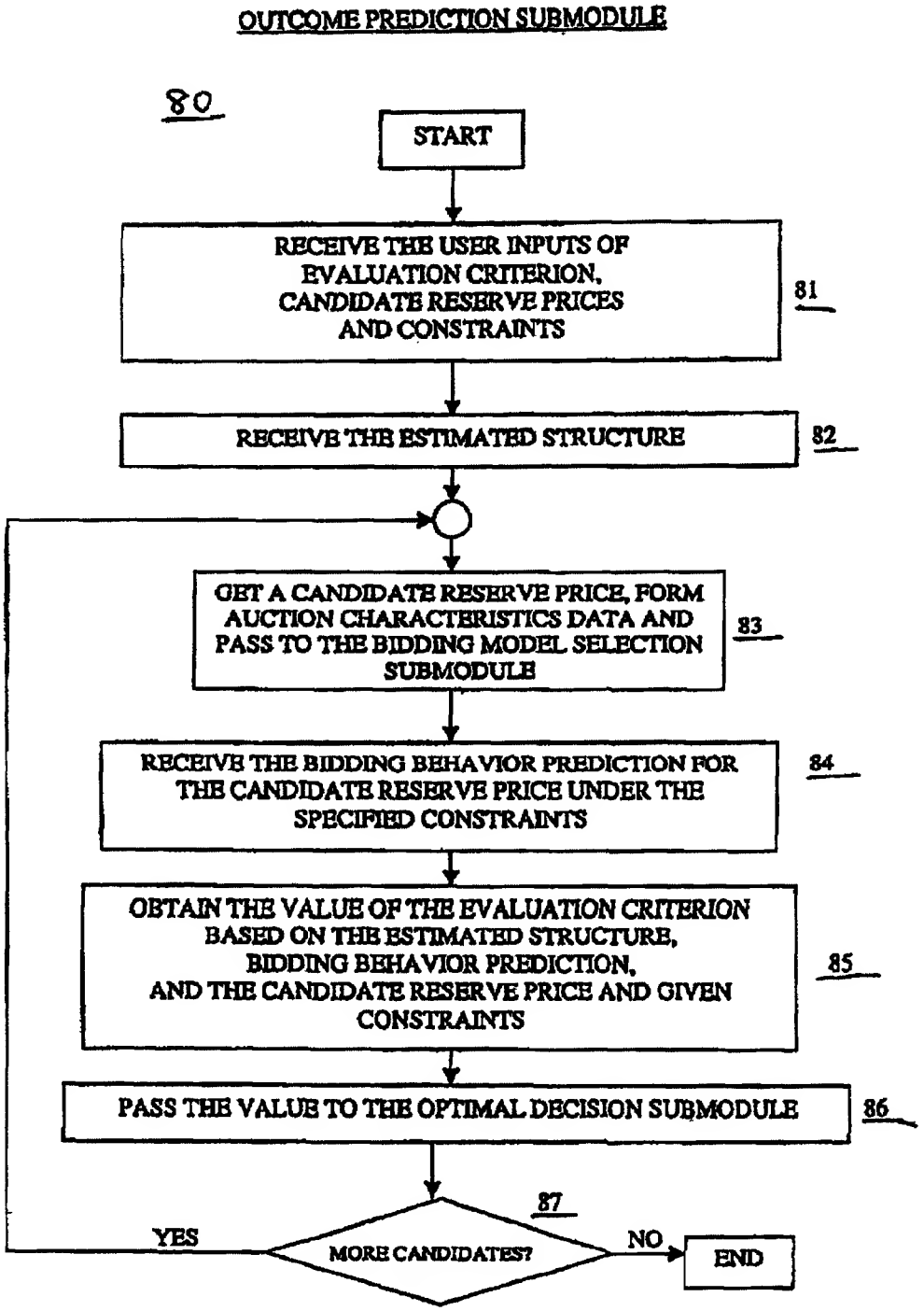

OUTCOME PREDICTION SUBMODULE
80
START
RECEIVE THE USER INPUTS OF EVALUATION CRITERION, CANDIDATE RESERVE PRICES AND CONSTRAINTS
81
RECEIVE THE ESTIMATED STRUCTURE
82
GET A CANDIDATE RESERVE PRICE, FORM AUCTION CHARACTERISTICS DATA AND PASS TO THE BIDDING MODEL SELECTION SUBMODULE
83
RECEIVE THE BIDDING BEHAVIOR PREDICTION FOR THE CANDIDATE RESERVE PRICE UNDER THE SPECIFIED CONSTRAINTS
84
OBTAIN THE VALUE OF THE EVALUATION CRITERION BASED ON THE ESTIMATED STRUCTURE, BIDDING BEHAVIOR PREDICTION, AND THE CANDIDATE RESERVE PRICE AND GIVEN CONSTRAINTS
85
PASS THE VALUE TO THE OPTIMAL DECISION SUBMODULE
86
87
MORE CANDIDATES?
YES
NO
END

FIGURE 8

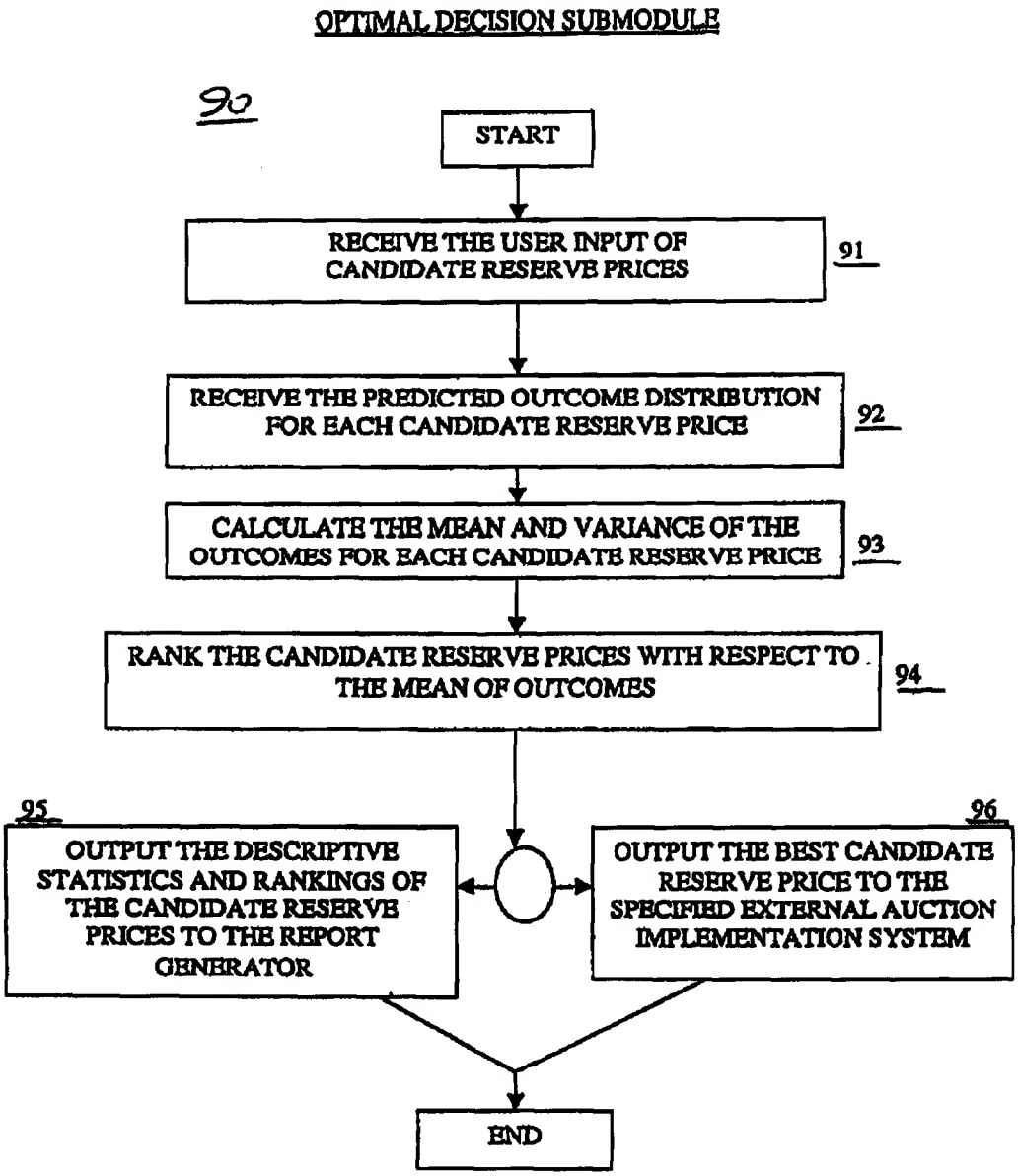

OPTIMAL DECISION SUBMODULE
90
START
RECEIVE THE USER INPUT OF CANDIDATE RESERVE PRICES
91
RECEIVE THE PREDICTED OUTCOME DISTRIBUTION FOR EACH CANDIDATE RESERVE PRICE
92
CALCULATE THE MEAN AND VARIANCE OF THE OUTCOMES FOR EACH CANDIDATE RESERVE PRICE
93
RANK THE CANDIDATE RESERVE PRICES WITH RESPECT TO THE MEAN OF OUTCOMES
94
95
OUTPUT THE DESCRIPTIVE STATISTICS AND RANKINGS OF THE CANDIDATE RESERVE PRICES TO THE REPORT GENERATOR
96
OUTPUT THE BEST CANDIDATE RESERVE PRICE TO THE SPECIFIED EXTERNAL AUCTION IMPLEMENTATION SYSTEM
END

FIGURE 9

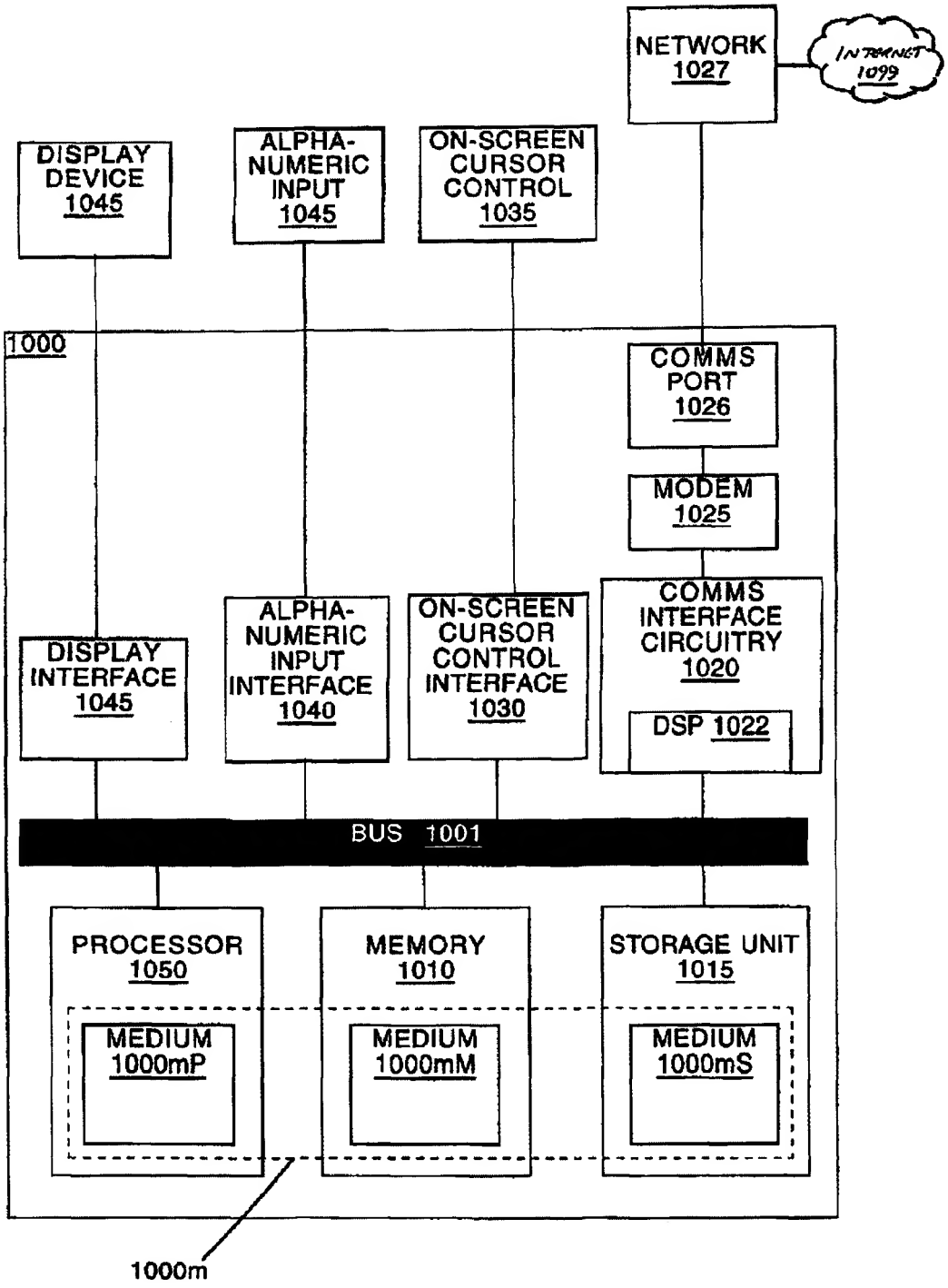

NETWORK
1027
INTERNET
1099
DISPLAY
DEVICE
1045
ALPHA-
NUMERIC
INPUT
1045
ON-SCREEN
CURSOR
CONTROL
1035
1000
COMMS
PORT
1026
MODEM
1025
COMMS
INTERFACE
CIRCUITRY
1020
DSP 1022
DISPLAY
INTERFACE
1045
ALPHA-
NUMERIC
INPUT
INTERFACE
1040
ON-SCREEN
CURSOR
CONTROL
INTERFACE
1030
BUS 1001
PROCESSOR
1050
MEMORY
1010
STORAGE UNIT
1015
MEDIUM
1000mP
MEDIUM
1000mM
MEDIUM
1000mS
1000m

Figure 10

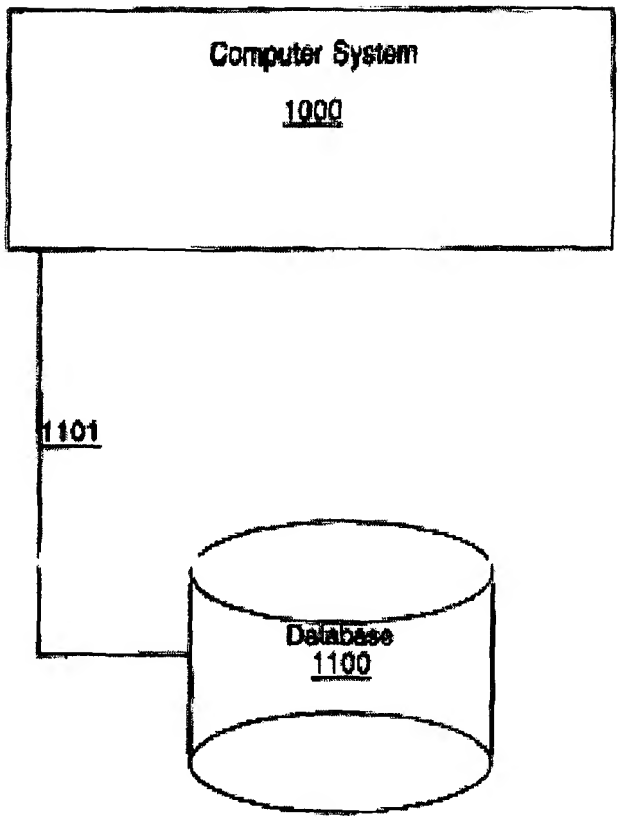


Fig. 11